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10/809,981	03/26/2004	David R. Adaskin	10030938-1	9631

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EXAMINER	
GORDON, BRIAN R	

ART UNIT	PAPER NUMBER
1797	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

IPOPS.LEGAL@agilent.com

Office Action Summary	Application No.	Applicant(s)	
	10/809,981	ADASKIN ET AL.	
	Examiner	Art Unit	
	Brian R. Gordon	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 November 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,12-17 and 21-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12-17 and 21-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed November 30, 2009 have been fully considered but they are not persuasive.

Applicant asserts the claims have been amended to overcome the previous 112 rejections. The examiner disagrees. The claim still remains silent to how nozzle plate(s) are related to the printhead such that the data can be related to such.

Furthermore claim 8 has been amended to include new matter. The specification does not disclose a printhead assembly as including electronic media. Applicant's paragraph defines what is conventionally known as electron storage media. It is unclear how a printhead assembly requiring only printheads (as claimed and defined in paragraph 0046) can also include any or computer readable mediums. Paragraphs 42-44 do not support the amendment as asserted by applicant.

As to Shchegrova, applicant asserts that selecting a frame as specified in Shchegrova is not the same as selecting a printhead assembly. The issue appears to be a matter of interpretation of what can be considered equivalent to the step of "selecting a printhead assembly". The step as claimed does not specify what exactly constitutes "selecting". The mere choice of an operator to use a device such as that disclosed by Shchegrova will satisfy the step of selecting a printhead assembly. Based upon the passage provided by applicant a well is a structure that contains fluid, and nozzle region is nothing more than any location where a nozzle(s) is located. In view of such one is not precluded from considering the individual frame assemblies (printheads)

include structure which is capable of holding fluids (wells) and a series (row) of dispensers (nozzles) such to the meet the limitations of the claim as drafted.

In view of applicant's assertion that Shchegrova et al. were commonly owned at the time of filing the previous 103 rejection is hereby withdrawn.

It should further be noted that the drawing of the instant invention shown in figure 1 appears to be identical to that as shown in the drawings of figure 9 of Shchegrova. In fact, the reference same reference numbers and terms are employed. The reference numeral 100 is used to referred to as the transporter and elements 210, 210a, 210b are referrred to as head system and heads, respectively. Clearly the structures are equivalent.

The claims are rejected as given herein.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-10, 12-17, and 21-27 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The printhead control model, printhead control software, device capable of reading electronic media, user interface, and other structural components are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Applicant's specification at paragraphs 009-012 state the invention is directed to printhead control model and software code.

However, the present claims are directed to a method involving a biopolymer array production system. There is no step of providing a production system. As such, the first step should be providing such production system comprising the required components to allow for the method steps to be performed. Furthermore the claim does not structural define what is considered a biopolymer array production device. It is unclear how the method is performed without providing for all the structural components. The only structural components required in the method are a printhead assembly and a computer processor. However, it should be noted the computer processor is only involved in the "configuring step" It is unclear if the selecting and configuring steps are performed manually by an operator or is this performed by a computer, control model, controller, etc. or some other programmed device. As presently claimed, an operator merely obtaining any structure that includes multiple printheads or dispensing devices as claimed will satisfy the selecting step. However, the specification implies that the essence of the invention is to have the process performed automatically via software on a media or programmed into a hardware component. There is no software or programmed hardware claimed to perform the steps.

As to the entering step, it is unclear how or where the data entered by an operator. There is no structure provided that allows for data to be entered. Furthermore, there is no structure (media) provided from which data can be read and any device that can actually electronically read media. One would not be capable of performing the method as claimed without providing for adequate structure to do so. It is unclear if the term “printhead assembly" references the entire device used in the method or a specific

arrangement of a plurality of particular printheads. The examiner assumes the latter is what applicant intends to claim. The examiner suggest applicant considers amending the claim to clarify that the device required for the method includes a plurality of printheads, and the selecting of a printhead assembly includes selecting at least two of the plurality of printheads to define the printhead assembly or something similar thereto.

4. Claims 1, 4, 6, 8, 9, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear how a type of nozzle plate and alignment of nozzle plate can be data when the claim does not previously establish that the printheads comprise nozzle plates or any means for moving or aligning any nozzle plates. Before any such data can be selected it must first be established that the device has the structure to provide for such a selection.

Claim 8, is directed to new matter.

Claim 9 is directed to a providing a production system prepared according to claim 1, however, it is unclear how one would provide a production system when it is not being established what structurally defines a production system.

As to claim 21, it is unclear what is being referenced by the phrase "use with the same". The same what?

Claim 24 is directed said nozzle plate. However as previously stated it is unclear how said nozzle plate is related to a printhead.

5. Claims 1-10, 12-17, and 21-27 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The invention as claimed is not disclosed in the specification. Furthermore claim 8 is directed to new matter. See above explanations.

Claim Rejections - 35 USC § 102

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-10, 12-17, 21-22, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Shchegrova et al. US 2003/0143329.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Shchegrova et al. discloses a method, apparatus, and computer program products useful in fabricating a chemical biopolymer arrays. The apparatus may include a head system, transport system, and a processor. The head system has multiple groups of drop dispensers. The transport system moves the head system with respect

to a substrate. The processor dispenses drops from dispensers during operation of the transport system, in a pattern along a selected path for each group (abstract). Biopolymers are typically found in biological systems and particularly include polysaccharides (such as carbohydrates), and peptides (which term is used to include polypeptides, and proteins whether or not attached to a polysaccharide) and polynucleotides as well as their analogs such as those compounds composed of or containing amino acid analogs or non-amino acid groups, or nucleotide analogs or non-nucleotide groups. [0024]

As described in Figure 8 the process includes a step of choosing a frame with the most non-error dispensers (830) from among the available frames. It will be appreciated that any criteria other than middle dispensers could be used for selecting a first set from among those frames which equally qualify as having the most non-error dispensers. All of the frames selected to this point may then be examined (860) to see if each set has a working dispenser in at least one frame. Since frame Y was selected as the first frame and it has an error dispenser D_{y10}, this is not true. Therefore, a frame is selected (870) from among remaining frames which has the highest number of non-error dispensers in sets not containing a non-error dispenser in previously selected frame (selecting printheads based on type and number of dispensers). At this point, the previously non-selected frames are W, X, and Z. [0042]

In a further step a best non-error dispenser is then selected (890) from among the Y and X frame dispensers in each of the foregoing sets using the pre-loaded into a memory 141 or manually entered by an operator criteria based on any one or more of

size, location, or shape of a deposited drop, and the result stored in a memory (such as memory 141 in FIG. 9). [0044]

Operator input device 312 may, for example, be a keyboard, mouse, or the like. Processor 140 has access to a memory 141, and controls print head system 210 (specifically, the activation of the ejectors therein), operation of the transport system, operation of each jet in print head system 210, capture and evaluation of images from the camera 304, and operation display 310 and speaker 314. Memory 141 may be any suitable device in which processor 140 can store and retrieve data, such as magnetic, optical, or solid state storage devices (including magnetic or optical disks or tape or RAM, or any other suitable device, either fixed or portable). Processor 140 may include a general purpose digital microprocessor suitably programmed from a computer readable medium carrying necessary program code, to execute all of the functions required of it as described below. It will be appreciated though, that when a "processor" such as processor 140 is referenced throughout this application, that such includes any hardware and/or software combination which will perform the required functions. Suitable programming can be provided remotely to processor 140, or previously saved in a computer program product such as memory 141 or some other portable or fixed computer readable storage medium using any of those devices mentioned below in connection with memory 141. For example, a magnetic or optical disk 324 may carry the programming, and can be read by disk reader 326. [0049]

Arrays may be read by any other method or apparatus than the foregoing, with other reading methods including other optical techniques (for example, detecting

chemiluminescent or electroluminescent labels) or electrical techniques (where each feature is provided with an electrode to detect hybridization at that feature). Results from the reading may be raw results (such as fluorescence intensity readings for each feature in one or more color channels) or may be processed results such as obtained by rejecting a reading for a feature which is below a predetermined threshold and/or forming conclusions based on the pattern read from the array (such as whether or not a particular target sequence may have been present in the sample, or whether or not a pattern indicates a particular condition of an organism from which the sample came). The results of the reading (processed or not) may be forwarded (such as by communication) to a remote location if desired, and received there for further use (such as further processing). [0056]

8. Claims 1-10, 12-17, and 22-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Ganz et al., US 6,979,425.

Ganz et al. discloses a high capacity microarrayer (DNA printer) for spotting solution onto slides in an automated microarray dispensing device (printhead assembly). The device includes actuators for moving the dispense heads (4, 6). Each of the print heads is capable of holding a liquid (well), includes nozzle region(s) that hold rows of tips (nozzles) 7 with orifices. (see figures). The device further includes a programmed computer and computer interface that a user may use to input data. A preferred embodiment is where an operator can decide whether or not to rework a spot based on a computer determination of pass or fail. In another preferred embodiment the rework decision is made automatically by the computer based on whether or not the

spot has passed or failed. (Here the operator or program inputs/reads data to select which printhead and specific number of nozzles to use. (column 19, Automatic Rework Capability).

Also, in the preferred embodiment, it was mentioned that dispense tips 7 and 42 were quill type dispense tips, it would be obvious to substitute other types of dispense tips. For example, piezo type dispense tips could also be used.

Claim Rejections - 35 USC § 103

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ganz et al.

11. Ganz et al. does specify the device is packaged with instructions.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize that the device of Ganz et al. would be accompanied with an operational/instruction manual to provide usage information to allow for proper operation of the device.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is 571-272-1258. The examiner can normally be reached on M-F, 1st Fri. Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian R Gordon/
Primary Examiner
Art Unit 1797